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ABSTRACT

This paper examined school principals' attitude toward technology, their computer experience, and the relationship between them. The research population consisted of all public elementary school principals in Antalya, Turkey (n=124). It was found that school principals tended to have a positive attitude toward technology, although principals were undecided about technology and administration and technology use dimensions. It was also found that there was no significant difference between principals' attitude toward technology and their computer experience. A copy of the attitude scale is appended. (Contains 18 references and 6 tables.) (Author/MES)

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ELEMENTARY SCHOOL PRINCIPALS' ATTITUDE TOWARDS TECHNOLOGY AND THEIR COMPUTER EXPERIENCE

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Abstract

The aim of this study was to determine school principals' attitude towards technology, their computer experience and relationship between them. It was found that school principals had tendency to have positive attitude towards technology; yet, principals were undecided about "technology and administration" and "technology use" dimensions. It was also found that there was no significant difference between principals' attitude towards technology and their computer experience.

Keywords: Principals' attitude, technology, computers

Introduction

The roles of the school principals are changing as parallel to the rapid developments in the global world. Among those changes includes the technological competence of the school principals. In order to be a technologically competent principal, school principals are expected to recognize, understand, and use the technology as well as to accept it as a reality. According to MacNeil & Delafield (1998), team building, share decision-making and increased technological competency should be among the school principals' roles.

Bailey & Lumley (1997) have argued that technology leaders have to possess the following skills: (1) technology skills, (2) people skills, (3) curriculum skills, (4) Learning the leadership. According to Bailey (2000), firstly, technology leaders should need to know about the change, the process of change, planning, ethics, teaching and learning, security, curriculum, staff development, technology support, and leadership. In addition, Bailey (2000) emphasizes the fact that school principals as technology leaders should understand the dynamics of change and peoples' attitude toward change before applying the technology at their schools. Secondly, it is important for the school principals as technology leaders to observe the change in terms of its speed and quality. In other words, they should know the external effects, especially technological effects, and their effect on education.

Principals as technological leaders have a crucial role not only at macro level but also at micro level. Studies show that school principals have important roles to encourage teachers to use technology as a means of instruction (Garcia, Johnson, & Dallman, 1998). Moreover, their knowledge and support during the integration of technology to the classrooms is a key factor (Mecklenburger, 1989; American National School Association, 2000).

The studies discussed and summarized above indicate that school principals tend to use technology at the cognitive (knowledge and skills) and competence (define

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technology, design with technology, apply and evaluate technology) levels when technology was used in the instructional process with success. However, the affective domain (attitude, values, awareness, and beliefs) is as much as important as these two (Resenburg, Ankiewicz, & Myburg, 1999).

Cain (2000), citing Crawford, asserted that one of the problems that school principals face concerning computerizing some of their task is computer phobia—which is also called cyber phobia or techno phobia (Bates, 2000; Filipczak, 1994). School principals' positive or negative attitudes would determine the integration of technology into schools as an important variable. Those who possess negative attitudes toward technology are thought to be ineffective whereas those who would possess positive attitudes toward technology are thought to be effective in the integration of technology into schools. Therefore, one of the aims in this study was to develop an attitude scale to determine school principals' attitude towards technology.

The power of computers as a teaching and learning tool is a reality in education today. It is the school principals who equip and allocate such technology in their schools. In addition to technology equipment and allocation, the school principals also benefit from technology, especially from computers in their daily routines, such as official correspondences (56%), record keeping in database (12%), communication (4.9%), and budgeting (23.6%), measurement and evaluation (3.3%) (Akbaba-Altun, 2000). Erdogan (1997) also presented in his research that school administrators use computers for the following aims: word processing (64%), graphs and diagrams (22%), database (36%), communication (4%), student affairs (registration (28%), grading (32%), follow-ups (10%), guidance (8%)), budgeting (64%), library and information (4%), software for course allocations (50%), measurement and evaluation (30%), personnel evaluation (24%), evaluation of school achievement (30%). From planning to institutionalize technology, the principals play a crucial role as a technological leader as well as instructional leader. Schools principals' expectations, attitudes, and motivations are important in order to succeed in this process.

Therefore, the other aim of this study was to investigate the relationship between school principals' level of computer experience and their attitude toward technology. In order to understand their level of computer experience, a questionnaire was used.

Method

Population and Sample

Population of this research consisted of all public elementary school principals (K-8) in Antalya/Turkey. In this sense, 124 principals participated to this study. School principals' demographic characteristics are given below:

Table 1. School principals' demographic characteristics.

		F	%
Principals' Gender	Female	2	1.6
	Male	121	97.6
	Missing Value	1	0.8
	Total	124	100.0
School type	Type A	64	51.6
	Type B	53	42.7
	Type C	7	5.6
	Total	124	100.0
Job experience as principal	1-5 year	15	12.1
	6-11 year	32	25.8
	12-17 year	33	26.6
	18-23 year	30	24.2
	24-29 year	10	8.1
	30- up	3	2.4
	Missing value	1	0.8
	Total	124	100.0
Level of education	4 year faculty	43	34.7
	Master	1	0.8
	Doctorate	3	2.4
	Other	73	58.9
	Missing value	1	0.8
	Total	124	100.0

The vast majority of the school principals (97.6 %) in the region were male in gender. In Turkish educational system, schools were grouped as Type A, B, and C based on the student population whom they serve, their distance to central office in the province, and their school size both student population and building-size wise. Type A schools mostly stationed at city centers and they are relative huge schools. Type B schools are located suburb of the city whereas type C schools are located mostly at rural areas, being especially village schools. The distribution of these schools in this study are as follows: Type A schools 51.6 %, Type B schools 42.7%, and type C schools 5.6 %. As school principals' job experiences are concerned they mostly located between years of 6-11 years (25.8%) and 12-17 years (26.6 %). In addition, principals' level of education was examined. It is seen that they were mostly (58.9 %) in other option. It means that they graduated from an earlier system, which aimed at training teacher with a 2-3 year of higher education. However, they completed their degree with open university education later on.

The Instrument

The attitude scale towards technology was developed by the researcher to determine principals' attitude towards technology. Attitude is defined as feelings toward some objects (Gable, 1986); positive or negative feelings about some person, object or

issue (Petty & Cacioppo, 1996). According to Ajzen (1989) "an attitude is an individuals' disposition to respond to favorability or unfavorability to an object, person, institution, or event, or any other describable aspects of the individuals' world" (p, 24). In order to develop attitude scale, firstly, literature related to attitude scales were reviewed and items pool prepared based on mostly Akbaba and Kurubacak (1998) study titled "teachers' attitude towards technology." The respondents were asked to indicate the most appropriate choice from the following likert scale.

5. Strongly Agree
4. Agree
3. Undecided
2. Disagree
1. Strongly Disagree

Validity and reliability of the attitude scale. First face validity was determined by giving scale to specialists at the area of Educational Administration and Measurement and Evaluation. After having their opinion, the necessary changes were made and a pilot study were conducted to 123 school administrators (principals and vice principals in Hatay) to develop the attitude scale. After pilot study, the final form was developed. For reliability, the SPSS reliability program (Nie, et all, 1972) was run and Cronbach alpha reliability coefficient was found to be α: .91. Principal Component Factor analysis was run in order to see the factors. In order to interpret groups Kaiser normalization and Scree tests were taken into consideration. Factor loads over 40 was taken. It was seen that there were 11 groups. But 10^{th} and 11^{th} group consisted of only one items and they were eliminated. Finally, Item numbers reduces to 37 and group were determined as 9 and again Cronbach alpha was run and found as α: .90.Then groups were named. Items Eigen values and variance displayed at table 2. Items internal consistency scores and groups name displayed at table 3. Items were coded as negative were: 1,3,5,7,10,12,14,17,19,21,24,26,27,28,30,32,35,36 (see, attitude scale).

Table 2. Eigenvalues and variances of groups.

Component	Initial Eigen values			Rotation Sums of Squared Loadings		
	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
1	10.353	25.882	25.882	3.945	9.862	9.862
2	2.820	7.050	32.932	3.629	9.072	18.934
3	2.426	6.065	38.996	3.346	8.364	27.298
4	1.979	4.949	43.945	2.680	6.700	33.999
5	1.812	4.531	48.476	2.439	6.099	40.097
6	1.729	4.322	52.798	2.297	5.743	45.841
7	1.424	3.561	56.359	2.237	5.593	51.434
8	1.356	3.391	59.749	1.881	4.703	56.137
9	1.230	3.074	62.824	1.841	4.603	60.740

Table 3. Groups name, their Alpha, and factor loads

Groups name and their ∝	Factor loads	Items
Group I Acceptance of technology ∝.84	.758	I do not believe that participating the interest groups related to technology is useful
	.747	I do not support the schools where technology is implemented
	.633	I feel myself older to follow developments in technology
	.633	I do not consider it to be essential of my personnel benefiting from the developing technologies for my school .
	.618	Seeing the implementation of new instructional technologies in my school makes me happy.
	.557	I enjoy informing people on new developments in technology.
	.552	I think about that technology will take the place of mankind.
Group II Technology and Development ∝. 83	.731	Learning the developments in technology seems to be a burden on me.
	.722	I enjoy being informed by my colleagues about the developments in technology.
	.637	I believe that instructional technology increase learning.
	.576	I like being present at places where technology is the subject-matter.
	.466	I like buying books related to technology.
Group III Pursuing Technology ∝.78	.768	I like visiting technology fairs.
	.760	I suggest people visit the technology fairs.
	.674	I enjoy watching tech-related television programs.
	.607	I feel happy making conversations with my colleagues on technology.
	.542	I enjoy following the current publications on technology.
Group IV Technology and Administration ∝.68	.762	I do not believe that the use of technology in school administration will be beneficial.
	.714	Attending to in-service training programs related to technology disturbs me.
	.599	I believe that learning new technologies is time consuming
	.512	I like using of current technologies in my school.
Group V Technology phobia ∝.67	.769	I think that technology alienates people.
	.682	I am afraid of being dependent on technology.
	.493	I hesitate to talk to people on new technological developments
	.474	I think that technology will decrease the interaction among people.
Group VI Internet Technology ∝.72	.791	I think that using of e-mail is a convenience.
	.675	Using e-mail is not important for me.
	.607	I like searching the Internet for research.
	.496	I do not consider doing research on the internet to be convenient.
Group VII Trusting Technology ∝.58	.709	I believe that technology is the only means to achieve information.
	.642	I believe that technology is under our control.
	.489	I would like to see quite a lot of time be devoted to technology during the in-service training programs.
Group VIII Technology and Pessimism ∝.59	.787	I do not find it useful introducing technology to children at the early ages.
	.511	I avoid using technology in my daily life.
	.491	I believe that developments in technology will lessen my professional roles at school.
Group IX Technology Use ∝.69	.813	I enjoy using computers.
	.710	I encourage people to benefit from technology.

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In order to ensure the external validity of the instrument, cross correlations of the groups were also considered. Table 4 shows the correlations between factors.

The validity and reliability coefficient obtained for attitude scale indicate that the instrument could be used as a measure of the principals' attitude towards technology.

Procedure

The developed attitude scale and survey related to principals computer use applied to principals who were in in-service training in Antalya. Of 130, only 130 responded and 124 were taken for analysis. First, in order to see demographic characteristics of the participants and frequency, percentage of the items and each group descriptive statistics was run. Second, Pearson correlation was used to see the correlation between principals attitude toward technology and their computer use experience.

Findings

Findings were given under three subheadings. First, principals' attitude towards technology is displayed. Second, descriptive statistics concerning principals' computer use is presented. Finally, the relationship between principals' level of computer use and their attitude towards technology is discussed.

Principals' attitude toward technology. Principals' attitude toward technology was determined with an attitude scale. Their mean scores were given at table 5. Mean scores were interpreted in two ways. First, if it is over three it was forecasted that they have a tendency toward a positive attitude. Second, their mean scores were determined according to the following scores:

1-1.79 "Strongly disagree"
1.80-2.59 "Disagree"
2.60-3.39 "Undecided"
3.40-4.19 "Agree"
4.20-5.00 "Strongly Agree"

Table 5. Principals' attitude scores as total and as a separate dimension.

Dimensions of attitude scale	$\overline{X}$	Degree
Acceptance of technology	3.82	Agree
Technology and Development	4.02	Agree
Pursuing Technology	3.57	Agree
Technology and Administration	3.00	Undecided
Technology phobia	3.71	Agree
Internet Technology	3.58	Agree
Trusting Technology	3.60	Agree
Technology and Pessimism	3.94	Agree
Technology Use	2.93	Undecided
Overall	3.64	Agree

Table 5 shows that principals have tendency to have a positive attitude toward technology. Principals reported that they have a positive attitude toward technology at the degree of "Agree", but they are "Undecided" for Technology and Administration, and Technology use dimensions.

When the groups correlated based on the attitude scale, it was seen that there is a significant correlation between the majorities of the groups. It shows that attitude scale is valid and reliable for forecasting principals attitude towards technology.

For acceptance of technology: There is a significant correlation between the acceptance of technology and technology development ($r = .57$, $p<0.01$); and, pursuing technology ($r = .25$, $p<0.01$); and, technology and administration ($r = .30$, $p<0.01$); and, technology phobia ($r = .69$, $p<0.01$); and, internet technology ($r=.71$, $p<0.01$); and, trusting technology ($r=.73$, $p<0.01$); and, technology and pessimism ($r=.51$, $p<0.01$). There is, however, no significant correlation between the acceptance of technology and technology use ($r = .03$, $p>0.01$).

For Technology and Development: There is a significant correlation between technology and development and pursuing technology ($r = .41$, $p<0.01$); and, technology and administration ($r = .25$, $p<0.01$); and, technology phobia ($r=.55$, $p<0.01$); and, internet technology ($r=.51$, $p<0.01$); and, trusting technology ($r=.48$, $p<0.01$); and, technology and pessimism ($r=.46$, $p<0.01$). There is, however, no significant correlation between technology and development and technology use ($r=.10$, $p>0.01$).

For Pursuing Technology: There is a significant correlation between pursuing technology and technology and administration ($r=.31$, $p<0.01$); and, technology phobia ($r=.35$, $p<0.01$); and, internet technology ($r=.34$, $p<0.01$); and, trusting technology ($r=.00$, $p<0.01$); and, technology and pessimism ($r=.21$, $p<0.05$); and technology use ($r = .39$, $p>0.01$).

For Technology and Administration: There is a significant correlation between technology and administration and technology phobia ($r=.37$, $p<0.01$); and, internet technology ($r=.20$, $p<0.01$); and, technology and pessimism ($r=.28$, $p<0.01$); There is no significant correlation between Technology and Administration and technology use ($r=.15$, $p>0.01$); and, trusting technology ($r=.11$, $p<0.01$).

For Technology Phobia: There is a significant correlation between technology phobia and internet technology ($r=.47$, $p<0.01$); and, trusting technology ($r=.47$, $p<0.01$); and, technology and pessimism ($r=.55$, $p<0.01$). There is a negative correlation between technology phobia and technology use ($r = -.06$, $p>0.05$).

Table 4- Pearson correlations between factors

	Acceptance of Tech		Tech and Development		Pursuing Tech		Tech and Admin		Tech Phobia		Internet Technology		Trusting Tech		Tech and Pessimim	
	R	*p*	*r*	*p*	*r*	*p*	*r*	*p*	*r*	*p*	*r*	*p*	*r*	*p*	*r*	*p*
Tech and Development	.57**	.000														
Pursuing Tech	.25**	.005	.41**	.000												
Tech and Admin	.30**	.001	.25**	.004	.31**	.000										
Tech Phobia	.69**	.000	.55**	.000	.35**	.000	.37**	.000								
Internet Technology	.71**	.000	.51**	.000	.34**	.000	.20*	.023	.47**	.000						
Trusting Tech	.73**	.000	.48**	.000	.29**	.001	.11	.187	.47**	.000	.64**	.000				
Tech and Pessimism	.51**	.000	.46**	.000	.21*	.018	.28**	.002	.55**	.000	.32**	.000	.25**	.004		
Tech Use	.03	.700	.10	.252	.39**	.000	.15	.079	-.06	.480	.05	.548	.10	.265	-.10	.261

** . Correlation is significant at the 0.01 level (2-tailed)
* . Correlation is significant at the 0.05 level (2-tailed)

As it is seen in Table 4, the general findings can be summarized as:

1. There is a correlation between the majority of the groups
2. Pursuing technology is correlated with technology use
3. There is a negative correlation between technology phobia, pessimism, and technology use
4. There is no significant correlation between trusting technology and administration; technology use and technology development; technology use and administration; trusting technology and technology use.

For Internet Technology: There is a significant correlation between internet technology and trusting technology ($r = .64$, $p<0.01$); and, technology and pessimism ($r = .32$, $p<0.01$). There is no significant correlation between internet technology and technology use ($r = -.05$, $p>0.05$).

For Trusting Technology: There is a significant correlation between trusting technology and pessimism ($r=.25$, $p<0.01$). There is no significant correlation between trusting technology and technology use ($r=.10$, $p>0.05$).

For Technology and Pessimism: There is a negative correlation between technology and pessimism and technology use ($r=-.10$, $p>0.05$).

Principals' computer use: Principals' computer use is an indicator of their previous experience in technology as well as their current status of computer use, which is the most current technology. This demographic data would also provide an insight to understand the population in depth.
In order to determine principals' computer use, the following questions were asked.

1. How long does your school have computer?
2. Do you have a computer in your room?
3. Do you use a computer?
4. How long do you use a computer?
5. Do you use a computer outside school?
6. What is your computer usage level?
7. Do you have experience in programming languages?

Table 6. Frequency distribution of questions

Questions		f	%
How long does your school have computer?	1 year	16	12.9
	2 year	20	16.1
	3 year	13	10.5
	4 year	17	13.7
	5 year	16	12.9
	6 year	7	5.6
	7 year	3	2.4
	8 year	5	4.0
	10 year	5	4.0
	14 year	1	.8
	Missing Value	21	16.9
	Total	124	100.0
Do you have computer in your room?	Yes	70	56.5
	No	51	41.1
	Missing value	3	2.4
	Total	124	100.0
Do you use computer?	Yes	85	68.5
	No	34	27.4
	Missing value	5	4.0
	Total	124	100.0
How long do you use computer?	1 year	19	15.3
	2 year	17	13.7
	3 year	12	9.7
	4 year	8	6.5
	5 year	14	11.3
	6 year	5	4.0
	7 year	3	2.4
	8 year	3	2.4
	10 year	3	2.4
	Missing value	40	32.3
	Total	124	100.0
Do you use computers outside school?	Yes	33	26.6
	No	51	41.1
	Missing value	40	32.3
	Total	124	100.0
What is your computer usage level?	Beginner	58	46.8
	Intermediate	49	39.5
	Advance	4	3.2
	Missing value	13	10.5
	Total	124	100.0
Do you have experience in programming?	Yes	9	7.3
	No	112	90.3
	Missing Value	3	2.4
	Total	124	100

Table 5 displays the frequency distributions of the data. According to the findings, we can infer that equipping the schools with computers is a new emerging phenomenon in the region. The last five years witness an immersion of computers to schools (65.8%). More than half of the school principals have computers in their rooms (56.5 %). One can infer that, compared to the immersion, some school principals may not choose to have one in their room. Or, they just don't have it yet. Understandably enough, most of them consider themselves as new beginners or intermediate level computer users (with a total of 86.3 %). Only 7.3 % of them stated that they had a programming background. It is also important to note that most of the school principals chose not to use a computer outside of the school.

Principals' attitude towards technology and their computer experience. The relationship between principals' attitude towards technology and their level of computer usage was determined by using Pearson correlation. First the relationship between principals' demographic characteristics and their attitude was tested. Then, principals attitude towards technology and their level of computer use was determined. It was found that there was no significant relations between principals attitude and type of school where principals work ($r=0.07$, $p>0.05$), their job experience ($r=-0.09$, $p>0.05$), their level of education ($r=-0.12$, $p>0.05$), having computers at their schools ($r=0.05$, $p>0.05$), using computers ($r=-0.08$, $p>0.05$), years of using computers ($r=-0.16$, $p>0.05$), level of their computer use ($r=-0.11$, $p>0.05$), and experience in programming ($r=-0.13$, $p>0.05$).

Discussion

There were two main purposes in this study: firstly, to develop an attitude scale to determine school principals' attitude towards technology; Secondly, to investigate the relationship between school principals' level of computer experience and their attitude toward technology. Based on the findings from the attitude scale, principals had the tendency to have a positive attitude ($\overline{X} = 3.64$) toward technology. Although principals reported that they have a positive attitude toward technology at the degree of "Agree", they are "Undecided" for Technology and Administration, and Technology use dimensions. In fact principals are expected to use technology to solve their problem and gain time for another activities (Cooper, 1989; Aquila, 1988). School principals also use computers to access database, reach information, budegeting, and for other routines (Erdoğan, 1997; Aquilera & Handricks, 1998; Akbaba-Altun, 2000). Beyond this, it is also calimed that 21st centuries principals should be technologically competent (MacNeil & Delafield, 1998; Bailey & Lumley, 1997) and use their competency to implement technology at their schools (Garcia, Johnson, & Dallman, 1998; Mecklenburger, 1989). It seems that Turkish principals still hesitate to use technology at their daily routines. Yet, this hesitation does not prevent them to use computers at their schools. The reason of this finding can be Centralized Turkish Educational System. Ministry of National Education send computers to schools, and later train principals with in-service training programs

that covers mostly technical knowledge rather than cognition or affective dimension of technology use.

Crwaford (1987), Flipczak (1994), Bates (2000), and Cain (2001) talk about computer phobia, technology phobia, and cyber phobia. In this research it was found that there was a negative correlation between technology use and pessimism, again technology use and technology phobia. Using technology more decrease phobia or pessimism or vice-versa.

Another finding shows that there is no correlation between acceptance of technology and technology use. It seems that Turkish school principals accept technology but hesitate to use them, yet, they use computers. More studies are needed to see correlation between attitude and behavior. It is also needed to find out how change process occur in technology implementation at schools. How long does it take and what kind of problems school principals' face?

Conclusion

This study showed that principals have positive attitude towards technology but still hesitate to benefit from them in their daily routines. It is found that all schools, except the missing values from the data, were equipped with computers, most of which (%66.1) happened to occur in the last five years. 68.5% of the principals indicated that they use computers; yet, 56.5% of them had computers in their own rooms. 26.6% of them had access to computers outside schools. 46.8% of them are to be at the beginning level of computer use whereas 39.5% of them are intermediate and only 3.2% of them perceived themselves at the advanced level.

In order to understand the relationship between school principals' attitude with other variables, school principals' level of computer experience and their attitude toward technology was correlated. It is found that there is no significant correlation between principals' attitude towards technology and type of schools where principals work, their job experience, level of education, having computers at schools, using computers, years of using computers, their level of computer use, and experience in programming.

For further studies, first, the relationship between attitude and behavior should be studied concerning technology implementation into education. Second, when technology is implemented, what the change process of implementation is and what kind of pattern principals does follow should be addressed? Which skills are more important in relation to technology implementations should also be examined.

References

Ajzen, I. Attitude structure and behavior. A chapter in A. R. Pratkonis, S.J. Breckler, A. G. Greenwald (Eds). 1989. Attitude structure and Function. Hilsdale, N.J: Erlbaum Associates, Publishers.

Akbaba-Altun, S. (2000). Okul yöneticilerinin bilgisayar kullanma düzeyleri. [Principals level of compuet usage]. Eğitim Araştırmaları, 1(2), 10-16.

Akbaba S., & Kurubacak G. Teachers' attitudes towards technology. Paper presented at 9th AACE International Conference of Society for Information Technology and Teacher Education, Washington D.C, March 10-14, 1998.

Bailey, G. D. (2000). Technology leadership: Ten essential buttons for understanding technology integration in the 21st century. [Online] Available at: http://www2.educ.ksu.edu/Faculty/BaileyG/html/currentbuttonart.html 1996-2000 Technology Leadership Center. Date: 11/20/2000

Bailey, G., & Lumley, D. (1997). Technology staff development program: A Leadership sourcebook for school administrator's. Blommington, Ind: National Educational Service

Bates, J.A. (2000). The world of computers. [On-line] Avaliable at: http://www.admin.nj.devry.edu/~jbates/comp108/lecture/intro/s1d010.htm.

Cain, K. G. (2001). Computer usage by building-level administartors in West Virginia Public Schools. Unpublished Doctoral Dissertation. West Virginia University. West Virginia.

Crawford, C. W. (1987, November). Why Not Automate Your Administrative? Principal,67(2), 8-13. 1987

Erdoğan, İ. (1997). Okul yöneticileri ve bilgisayarlar. [Principals and computers] Yaşadıkça Eğitim, 51, 27-32.

Filipczak, R. (1994, January) . Technolitracy, technofabia, and programming your VCR. Traning, 48. (In K. G Cain,. (2001). Computer usage by building-level administartors in West Virginia Public Schools. Unpublished Doctoral Dissertation. West Virginia University. West Virginia).

Gable, R. K.(1986). Instrument development in the affective domain. Boston, MA: Kluwer Academic Publisher.

Garcia, A., Johnson, A., & Dallman, J. (1998). The role of the principal in technology integration. [Online]Avaliable at: http://www.coe.uh.edu/insite/elec_pub/HTML1997/td_garc.htm . Date:11/20/2000

MacNeil, A., & Delafield, D.P. (1998). Principal leadership for successful school technology implementations. (Eds.). S.McNeil, S.D. Price, S. Boger-Mehall, B. Robin, J. Willis. SITE 98. AACE 9th International Conference Vol. I. p. 296-300.

Mecklenburger, A. (1989). Technology in the 1990's: Ten secrets for success, Principals, 2, 6-8.

Nie, N.H., Hull, C.H., Jenkins, J.G., Steinbrenner, K., & Bent, D. H. (Eds.) (1975). Statistical Package for the Social Sciences (2nd ed.) N.Y: MacGrow-Hill.

Petty, R. E., Cacioppo, J.T. (1996). Attitudes and persuasion: Classic and contemporary approaches. Colorado: Westview Press.

Roles in technology planning. [online] Available at: http://www.nsba.org/sbot/toolkit/ritp.html.Date: 11/20/2000

Resenburg, S., Ankiewicz, V.P., & Myburg, C. (1999). Assessing South Africa Learners'Attitudes Towards Technology by Using the PATT (Pupils'Attitudes Towards Technology) Questionnaire. International Journal of Technology and Design Education.I.9,137-139.

Appendix A- The Attitude Scale for school principals

Dear School Principal;
In this scale, the purpose is to determine school principals' attitude toward technology. There are no right or wrong answers in this scale. Please, mark the appropriate circle that represents your stance toward each item in the scale. I would like to thank for your contribution.

Sadegul Akbaba-Altun

		Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1	I avoid using technology in my daily life.	O	O	O	O	O
2	I encourage people to benefit from technology.	O	O	O	O	O
3	I do not find it useful introducing technology to children at the early ages.	O	O	O	O	O
4	I enjoy using computers.	O	O	O	O	O
5	I believe that learning new technologies is time consuming	O	O	O	O	O
6	I feel happy making conversations with my colleagues on technology.	O	O	O	O	O
7	I believe that developments in technology will lessen my professional roles at school.	O	O	O	O	O
8	I like using of current technologies in my school.	O	O	O	O	O
9	I like visiting technology fairs.	O	O	O	O	O
10	Attending to in-service training programs related to technology disturbs me.	O	O	O	O	O
11	I enjoy following the current publications on technology	O	O	O	O	O
12	I do not believe that the use of technology in school administration will be beneficial.	O	O	O	O	O
13	I enjoy watching tech-related television programs.	O	O	O	O	O
14	I think that technology alienates people.	O	O	O	O	O
15	I think that using of e-mail is a convenience.	O	O	O	O	O
16	I suggest people visit the technology fairs.	O	O	O	O	O
17	I am afraid of being dependent on technology.	O	O	O	O	O
18	I enjoy being informed by my colleagues about the developments in technology.	O	O	O	O	O
19	I think that technology will decrease the interaction among people.	O	O	O	O	O
20	I like being present at places where technology is the subject-matter.	O	O	O	O	O
21	Learning the developments in technology seems to be a burden on me.	O	O	O	O	O
22	I believe that instructional technology increases learning.	O	O	O	O	O
23	I enjoy informing people on new developments in technology.	O	O	O	O	O
24	I think about that technology will take the place of mankind.	O	O	O	O	O
25	I like searching the Internet for research.	O	O	O	O	O
26	I consider myself older to learn the new developments in technology	O	O	O	O	O
27	I do not believe that participating the interest groups related to technology is useful	O	O	O	O	O
28	I do not support the schools that/where technology is used/implemented	O	O	O	O	O
29	Seeing the implementation of new instructional technologies in my school makes me happy.	O	O	O	O	O
30	I do not consider it to be essential of my personnel benefiting from the developing technologies for my school.	O	O	O	O	O
31	I would like to see quite a lot of time be devoted to technology during the in-service training programs.	O	O	O	O	O
32	I do not consider doing research on the internet to be convenient.	O	O	O	O	O
33	I believe that technology is the only means to achieve information.	O	O	O	O	O
34	I believe that technology is under our control.	O	O	O	O	O
35	I hesitate to talk to people on new technological developments	O	O	O	O	O
36	Using e-mail is not important for me.	O	O	O	O	O
37	I like buying books related to technology.	O	O	O	O	O

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